

ABSTRACT OF THE DISCLOSURE

CHECK BIT FREE ERROR CORRECTION FOR  
SLEEP MODE DATA RETENTION

5 A DRAM memory has a reduced refresh rate in a  
sleep mode to conserve power. Error Correction Codes  
(ECC) are used to correct errors that may arise due to  
the reduced refresh rate. ECC encoding occurs at the  
time of entering the sleep mode and ECC decoding for  
error detection and correction need only take place  
10 upon wake up when resuming active mode. In addition,  
the memory system reassigns a portion of the memory for  
storing the additional parity bits required for the  
error correcting code (ECC).

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